SOUTH CAROLINA

NONPOINT SOURCE MANAGEMENT PLAN

2020 - 2024

South Carolina Department of Health and Environmental Control

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Bureau of Water
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TABLE OF CONTENTS

I. INTRODUCTION

The 2020-2024 South Carolina Nonpoint Source Management Plan (Plan) describes the State's Nonpoint Source Management Program, which is focused on protecting high quality waters from nonpoint source (NPS) threats and restoring waters impaired by NPS pollution. The South Carolina Department of Health and Environmental Control (DHEC) expects this Plan to be both useful and informative. The Plan will serve as a tool for positive change in protecting and improving water quality, as it provides a framework for addressing the major causes and sources of nonpoint source pollution in the state. It outlines the state's goals and objectives for mitigating nonpoint source pollution and the strategies, management measures, partnerships, funding sources, and evaluation tools necessary to achieve those goals.

A. NONPOINT SOURCE POLLUTION

Nonpoint source pollution occurs when rainfall or irrigation runs over land or percolates through the ground, picking up pollutants and carrying them into rivers, lakes, coastal waters, and ground waters. Unlike point source pollution, which can be traced to a defined source, nonpoint source pollution is diffuse, making it difficult to identify and control its source.

Nonpoint sources of pollution are important to control because they are continuously recognized as the nation's largest cause of surface water quality impairments. NPS pollution may contain bacteria and nutrients from malfunctioning septic systems or animal waste, eroded soil from land disturbances, nutrients and pesticides from agricultural or urban areas, air pollutants from atmospheric deposition, and heavy metals and other toxins bound to soil particles. These pollutants can impact human and aquatic health, effect aquatic and marine habitat, and make drinking water more difficult to treat.

B. HISTORY OF SC'S NONPOINT SOURCE MANAGEMENT PROGRAM

Recognizing the growing problem of NPS pollution, in 1987, Congress added nonpoint source provisions to the Clean Water Act (CWA) under Section 319. Among other provisions, Section 319 requires each state to develop and maintain a Nonpoint Source Management Program to comprehensively address nonpoint sources of pollution. Contingent on EPA's approval of the State's NPS Management Plan, Section 319 also provides grants to states for implementing NPS best management practices (BMPs).

The Nonpoint Source Management Plan has been prepared in accordance with Federal and State regulations and was originally approved by EPA in 1990. DHEC has statutory authority to enforce the Nonpoint Source Management Program provisions of 33 U.S. Code § 1329 through the SC Pollution Control Act, S.C. Code Ann. § 48-1-10, and the regulations and permitting programs promulgated pursuant to the Pollution Control Act. Additionally, the South Carolina Coastal Zone Management Act of 1977, S.C. Code Ann. § 48-39-10, provides additional authority in the coastal counties of the State. South Carolina received full coastal program approval by EPA in 2008. Since the original South Carolina NPS Program was developed, the Nonpoint Source Management Plan has been updated twice. This Plan is an update to the 2015-2019 NPS Management Plan, reflecting improvements in many of South Carolina's NPS Management Program activities and a refocus of the Program's goals.

II. NONPOINT SOURCE PROGRAM MISSION AND GOALS

MISSION

The South Carolina Nonpoint Source Program will protect high quality waters from NPS threats and restore waters impaired by NPS pollution.

GOALS:

1. **Restoration of SC Waters** – to restore waterbodies that are impaired by nonpoint sources so that they meet water quality standards
2. **Protection of SC Waters** – to prevent nonpoint source-related impairments of unimpaired waterbodies

DHEC has established five guiding principles to help implement strategies to achieve NPS Management Program goals and objectives for this Plan period. In order to quantitatively measure progress towards DHEC's long-term goals, objectives with measurable milestones have been developed that further define the direction and activities related to achieving the intent of each goal. Program objectives and milestones are found in Section IX, along with each corresponding year for implementation, as well as related goals, principles, and key partners.

III. PROGRAM MANAGEMENT

Section 319 of the Clean Water Act (CWA) outlines two major programs to address nonpoint sources of pollution, a management program and a grant program, both of which require significant administrative oversight by states to implement. Each year, states receive funding appropriated under Section 319(h) of the Clean Water Act to implement these programs. The funds are an important resource for restoring and protecting waterbodies, particularly in South Carolina where there are few other resources for this purpose. EPA guidelines require at least 50 percent of funds to be set aside for watershed implementation projects through the grant program. The remaining NPS Program funds are used to support the full array of program management activities outlined in this Management Plan including planning, technical assistance, enforcement, and monitoring.

South Carolina's Nonpoint Source Coordinator has the primary responsibility of implementing and tracking implementation of both the Management Program and the Grant Program. Activities are reported to EPA each December in the NPS Annual Report and regularly in EPA's Grants Reporting and Tracking System (GRTS). Program implementation via DHEC staff is also tracked through annual reporting, analysis of staff time, and regular communication with applicable staff.

Close coordination with a variety of DHEC programs such as coastal nonpoint source, agriculture permitting, stormwater, Total Maximum Daily Loads (TMDLs), State Revolving Funds (SRF), wetlands protection, and onsite wastewater is essential. NPS staff actively work with other program areas to align priorities and promote additional efficiencies where possible. Outside of DHEC, the NPS Program partners with EPA, SC Forestry Commission, USDA Natural Resources Conservation Service, SC Department of Natural Resources, Clemson University, local governments, nonprofits, and many other organizations with nonpoint source ties. While South Carolina currently enjoys a number of close partnerships, it is a continuous goal to develop and strengthen partnerships to increase collaborative efforts as a means of addressing state NPS pollution.

The NPS Management Plan must evolve over time as funding and water quality priorities change. To have an effective and efficient program, it is critical for program planning and updating to occur regularly. DHEC will review the objectives and milestones in this Plan as part of the annual application process and will update the entire Management Plan no less than every five years.

IV. ASSESSMENT AND PLANNING

DHEC is responsible for assigning designated uses to South Carolina waterbodies and establishing rules to protect those uses. The Department regularly assesses water quality to determine if waterbodies are meeting standards. Assessments result in an overview of the status of South Carolina's waterbodies for Clean Water Act reporting, provide data for determining whether waterbodies should be listed as impaired, and support the development of Total Maximum Daily Loads (TMDLs) and watershed-based plans to correct water quality problems.

A. WATER QUALITY STANDARDS

Water quality standards serve as the basis for protecting and regulating the quality of South Carolina's waters. They define the goals for a waterbody by designating its uses, setting criteria to protect those designated uses, and establishing an antidegradation policy to protect and maintain existing uses and high-quality waters.

B. STATEWIDE ASSESSMENT

Every two years, DHEC is required by the Clean Water Act to assess and report on the overall condition of the State's waters. The SC 305(b) and 303(d) Integrated Report presents a general statewide assessment of water quality conditions and water pollution control programs in South Carolina.

C. IMPAIRED WATERS

303(d)

For those surface waters that do not meet water quality standards, Section 303(d) of the CWA requires all states to place those waterbodies on a comprehensive list of impaired waters, also known as the 303(d) list. The purpose of the list is to identify impaired waters so that the source of impairment can be described and corrective actions can be implemented to improve water quality.

Once a site is included on the 303(d) list of impaired waters, a Total Maximum Daily Load (TMDL) must be developed. The goal of a TMDL is to identify potential pollution sources and calculate and quantify the reduction of those sources in order to meet water quality standards. After the approval of the TMDL, an implementation plan can be developed and implemented to reduce sources of pollution within a watershed and restore the full use of the waterbody.

Results from the most recent assessment and 303(d) list provided to EPA in 2016, along with results on the 2018 Draft 303(d) list, are summarized in Tables 1 and 2. The results are shown for all fresh and salt waters combined.

Table 1. Impairments by Category on the SC 2016 303(d) List

Category	Total Impairments	Streams	Lakes	Estuaries	Shellfish Waters	Beaches
Bacteria	310	149	3	54	87	17
Nutrients, pH, and DO	184		184			
Fish tissue, Hg, and PCBs	177	177				
Macroinvertebrates	176	176				
Dissolved Oxygen	134	104		30		
Turbidity	83	15	12	56		
pH	43	38		5		
Metals	38	25	4	9		
Ammonia Toxicity	6	3	2	1		

Table 2. Impairments by Category on the SC Draft 2018 303(d) List

Category	Total Impairments	Streams	Lakes	Estuaries	Shellfish Waters	Beaches
Bacteria	362	167	5	60	116	14
Nutrients, pH, and DO	197		197			
Fish tissue, Hg, and PCBs	190	190				
Macroinvertebrates	173	173				
Dissolved Oxygen	142	108		34		
Turbidity	92	16	13	63		
pH	45	40		5		
Metals	36	23	4	9		
Ammonia Toxicity	5	3	1	1		

Both the 2016 and Draft 2018 303(d) lists reflect a similar trend in terms of relative category size of impaired sites, and the following description of the data accurately discusses both lists. In terms of number of sites impaired, bacteria continue to be the largest category of impaired sites in South Carolina. The next largest category is nutrients and nutrient-related parameters, which are all lake sites. Currently, SC has only established numeric nutrient criteria for lakes larger than 40 acres, so other waters are not assessed for nutrients. Nutrient enrichment in lakes may cause variations in pH, dissolved oxygen, and may lead to excessive and undesirable phytoplankton growth. For the purpose of comparing categories of impairments, lake pH and dissolved oxygen impairments are combined with total phosphorus, total nitrogen, and chlorophyll a to give a total number of lake impairments potentially linked to nutrients.

Fish tissue mercury and PCBs also rank high based on the number of impaired sites in South Carolina; however, 319 program approaches are not viewed as the solution to these problems, so they are not currently considered Nonpoint Source Program priorities.

Many sites in South Carolina are also listed as impaired due to a poor benthic macroinvertebrate community. In most cases the specific cause is not determined. More information is needed about the causes of impairment and appropriate solutions before broadly targeting 319 implementation projects in this direction. However, the 319-grant program will seek to address impaired benthic communities where sufficient information allows development of watershed-based plans and identification of appropriate BMPs. Many 319 grants target additional water quality impairments and, through the selected BMPs, also end up addressing impaired benthic communities.

305(b)

The statewide statistical survey component of the South Carolina ambient monitoring program is designed to make statewide estimates of water quality. The data derived from those monitoring activities is used to develop the stream, lake, and estuarine summary information presented in the 2016 SC Integrated Report and can also be found in **Tables 3-5** of this Plan. Once the 2018 SC Integrated Report is finalized and approved by EPA, this Management Plan will be updated to include this more recent information.

Based on the modified USEPA National Hydrography Dataset and the results of survey site selection validation, South Carolina has an estimated 26,259 miles of freshwater rivers and streams representing the stream sampling design frame, and 393,430 acres of lake and reservoir representing the lake/reservoir sampling design frame. Based on a hydrographic GIS cover developed jointly by SCDHEC and the South Carolina Department of Natural Resources and the results of survey site selection validation, South Carolina has an estimated 289 combined square miles of tidal creek and open water habitat representing the estuarine sampling design frame.

Quality assured water quality data collected as part of the survey network from 2010 through 2014 provided the database for this assessment. The tables in the 2016 305(b) report include the cause of use support nonattainment affecting the largest size in each waterbody type for aquatic life and primary contact recreation uses. These results are summarized in **Tables 3, 4, and 5** below for rivers and streams, lakes, and estuaries, respectively.

Table 3. Total Size of Rivers and Streams Impaired by Various Cause Categories in 2016 305(b) Report

Cause Category	Survey-Based Estimated Miles of Total Resource*	Lower 95 Percent Confidence Interval (Miles)	Upper 95 Percent Confidence Interval (Miles)
E. coli	17,550	14,878	20,223
Dissolved Oxygen	1,900	756	3,044
pH	426	0	1,102
Turbidity	95	0	251
Ammonia	95	0	263
Macroinvertebrate Community	32	0	87

**26,259 miles est.*

Table 4. Total Size of Lakes Impaired by Various Cause Categories in 2016 305(b) Report

Cause Category	Survey-Based Estimated Acres of Total Resource*	Lower 95 Percent Confidence Interval (Acres)	Upper 95 Percent Confidence Interval (Acres)
Total Phosphorus	63,300	42,344	84,256
pH	25,147	12,052	38,243
Dissolved Oxygen	10,432	0	21,692
Chlorophyll a	9,998	0	20,337
Total Nitrogen	8,161	987	15,334
Ammonia	5,062	0	13,747
E. coli	3,762	0	7,711
Turbidity	2,794	0	7,563

**393,430 acres est.*

Table 5. Total Size of Estuaries Impaired by Various Cause Categories in 2016 305(b) Report

Cause Category	Survey-Based Estimated Square Miles of Total Resource*	Lower 95 Percent Confidence Interval (Square Miles)	Upper 95 Percent Confidence Interval (Square Miles)
Turbidity	34.5	23.0	46.1
Dissolved Oxygen	14.1	3.9	24.4
Enterococci	12.7	4.9	20.5

**289 square miles est.*

South Carolina's 2016 305(b) report to EPA identifies bacteria as the most prevalent cause of non-attainment in the state's streams and rivers when calculated based on affected river miles. The 2016 305(b) report classifies nutrients and nutrient-related parameters as the major cause of non-attainment in the state's lakes based on affected acres. Turbidity is the main causes of impairment in estuaries.

SC Integrated Report

Based on the causes of impairment in the South Carolina 303(d) list of impaired waters and the results of DHEC's statistical survey sampling documented in the 305(b) report, bacteria and nutrients (including related parameters) continue to be the most widespread problems facing South Carolina waters. Nonpoint sources are significant contributors of bacteria and nutrients, and these pollutants will continue to be the main parameters of concern for DHEC's Nonpoint Source Program.

D. WATERSHED PRIORITIZATION

The watersheds discussed below represent DHEC's priority watersheds (Figure 1). DHEC will continue to use bonus points in the watershed-based plan and 319-project selection process for proposals located in these watersheds.

DHEC Watersheds and 319 Priority Watersheds

DHEC and EPA Region 4 established nine priority watersheds across the state. These watersheds were identified by DHEC, EPA, and 319 project partners based on water quality, other state and federal priorities, and local interest. Bonus points are awarded to any project proposals including these watersheds to ensure priority in DHEC funding mechanisms directed to these watersheds. These include the following Hydrologic Unit Codes (HUCs):

- 03050109 (Saluda)
- 03060106 (Middle Savannah)
- 03050206 (Edisto)
- 030601100301 (May River)
- 030502080606 (Okatie River)
- 0304020106, 0304020107 (Black Creek)
- 030502090201, 030502090202 (Sewee-Santee)
- 03060103 (Upper Savannah)
- 03060109 (Lower Savannah)

USDA NRCS NWQI Priority Watersheds

The Nonpoint Source Management Program coordinates with USDA's Natural Resources Conservation Service (NRCS), to select 12-digit watersheds for the National Water Quality Initiative (NWQI). These watersheds are receiving additional attention by NRCS for installation of agricultural BMPs and have been

prioritized by DHEC for ongoing ambient water quality monitoring to document watershed response. These watersheds are selected on a yearly basis. Watersheds are first selected for the Readiness Phase, during which an assessment is done. Once readiness assessments are completed for the watershed, this will inform implementation in the next fiscal year and beyond.

FY20 brought about several updates to the requirements for NWQI and onward, including:

- Assessment to guide implementation of conservation practices at the HUC-12 level, including those within a Source Water Protection Area
- Identification and mapping of critical source areas for identified pollutants
- Water quality improvement goals and methods to track progress toward them
- Outreach strategies for implementation on vulnerable areas

Also beginning in FY20, all NWQI watersheds (new or existing) must have a watershed-based plan or assessment that informs implementation. This provides greater opportunity for collaboration between the 319 Program and NRCS.

The NWQI watersheds identified in FY19 (Figure 1) are:

- NWQI Readiness Watersheds for Assessment:
    - 030501091103 (Big Creek-Little Saluda River)
    - 030402011102 (Smith Swamp)
- NWQI Implementation Watersheds
    - 030501091104 (Upper Little Saluda)

Figure 1. South Carolina's Priority Watersheds for 2020

V. PLAN IMPLEMENTATION

South Carolina uses a combination of statewide programs and on-the-ground projects to address significant nonpoint sources of water quality pollution, such as agriculture, development, urban, forestry, coastal activities, and mining. Programmatically, the state supports a variety of voluntary and regulatory programs and partnerships to improve water quality. Not all of the following programs receive 319 funding or count toward non-federal match requirements, but they all directly impact potential sources of NPS pollution and are thus considered to be key elements in South Carolina's overall NPS pollution reduction effort. At the project level, DHEC works to address NPS priorities through specific watershed improvement efforts, which are the primary focus of 319-funded projects and activities.

A. WATERSHED MANAGEMENT

As seen in Figure 2, DHEC divides South Carolina into eight major river basins: Broad, Catawba, Edisto, Pee Dee, Salkehatchie, Saluda, Santee, and Savannah. Together, these river basins contain over 26,000 miles of stream, 393,000 acres of lake, and 280 acres of estuary. These eight basins are broken into 12-digit Hydrologic Unit Codes (HUCs). EPA requires the use of watershed-based plans (WBPs) for 319 implementation projects and has issued specific guidelines regarding nine required elements that must be included in those plans. In order to focus efforts and most effectively target stakeholders during the project, SC's Nonpoint Management Program looks at watersheds based on 12-digit HUCs. Specifically, both WBP development and 319 project solicitations specify that proposals should have a limited watershed size to provide a workable focus area during the limited project time. Most accepted proposals cover a reasonable geographic scope of one to four 12-digit HUCs.

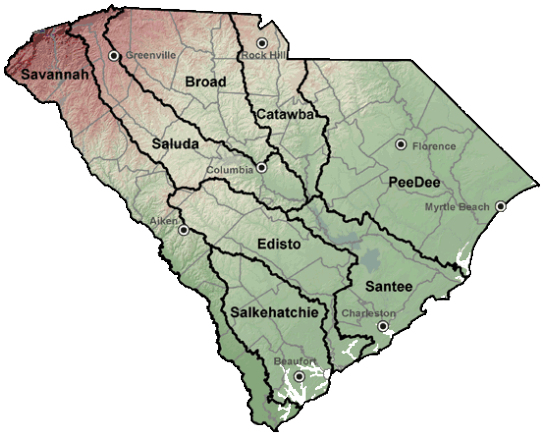

Figure 2. South Carolina's Eight Major Watersheds

DHEC has developed a suite of tools to assist stakeholders in the creation and implementation of watershed-based plans.

South Carolina's watershed approach takes a holistic view of nonpoint source pollution, addressing all sources within a watershed using complementary practices. The NPS Program continues to look for ways to coordinate and target resources from multiple program areas in watersheds with NPS problems, helping to ensure that maximum water quality benefits are achieved.

Each major basin in South Carolina has a Watershed Manager that supports watershed-based planning and water quality improvement projects to protect and restore waterbodies. Watershed Managers work closely with community stakeholders to develop and implement plans to address nonpoint sources of pollution. Successful development and implementation of WBPs depend upon the involvement and support of local stakeholders. Watershed Managers work with DHEC staff, local governments, other state agencies, academia, conservation organizations, landowners, and citizens in addressing chronic NPS

problems throughout the state through appropriate use of BMPs. Watershed Managers also provide technical assistance in the identification, assessment, and long-term management of NPS pollution problems affecting waters of the state, primarily through the 319-grant process.

B. 319 NONPOINT SOURCE GRANT PROGRAM

South Carolina receives an annual grant allocation from EPA to implement the NPS reduction strategies described in this Plan. A portion of these funds, the Watershed Project funds, are passed on through a competitive grant process to eligible organizations to conduct projects identified in approved watershed-based plans to reduce or prevent NPS pollution. Grant proposals for NPS projects are solicited annually. Projects are selected using a competitive proposal process. A Request for Proposals (RFP) is released at least once per year along with an initial proposal application. Applicants must follow specific guidelines to develop a proposal, which are published on the DHEC website and included in the RFP and initial proposal application. The proposed project must implement all or a portion of a watershed-based plan and include at least a 40 percent match, as Section 319 requires federal funds to be matched by 40 percent non-federal funds. Match includes cash and in-kind services used for NPS activities if they are not sustained by another federal source.

As of FY19, Letters of Assurance are required for projects proposed in MS4s to ensure that all activities and load reductions brought about by 319 funds are not counted toward NPDES requirements. Proposed projects are also reviewed by MS4 staff to ensure that all proposed BMPs go “above and beyond” NPDES permit requirements.

Initial proposals deemed eligible are then requested to submit a final application, which is reviewed by an intra-agency committee of professionals from various DHEC Bureau of Water programs, including a coastal NPS representative. The committee meets to discuss the applications and selects which projects will be funded, stipulating any needed changes or conditions. Following committee selection, applicants must make requested changes. DHEC reviews these changes and forwards the finalized workplans to EPA Region 4 for review and final approval. Once this has been completed, DHEC will then issue a grant agreement and purchase order for each project.

It is worth noting that project selection in South Carolina occurs after the annual award from EPA has been received. This allows stakeholders to apply for and receive funding relatively quickly, which helps keep momentum in a watershed. Other states engage in a selection process prior to their initial grant application to EPA. As there is a delay between initial application to EPA and receipt of final award, this would mean that applicants may wait well over one year between applying for funding and award of a contract. This is not practical in South Carolina and, as such, DHEC will continue to utilize a placeholder project in the annual workplan for issuance of these projects. EPA approves each project workplan prior to funding. Further information about 319 grants and the application process can be found on the Watersheds and 319 webpage. Details on 319 grant-funded projects can be found in South Carolina’s NPS Annual Reports.

Project implementation typically takes three years. Throughout this period, DHEC staff closely monitor both the project work and expenditures, working with grantees to ensure funds are spent in a timely manner. Should grantees be unable to spend all awarded funding, NPS staff will reassign that funding to another project with EPA’s guidance. This strategy also assists in limiting unliquidated obligations (ULOs)

and large balances at the end of a grant period. Beyond limiting ULOs, DHEC staff closely track expenditures of all grant funds. Grantees submit invoices no less than quarterly and provide full backup documentation of their expenditures. Grantees are also subject to quarterly reporting and at least one site visit a year. Reports include documentation of BMPs installed and progress towards defined milestones. All grant recipients are provided custom electronic reporting workbooks to streamline reporting and ensure consistency. Watershed Managers and NPS staff regularly communicate with all grant recipients and assist as needed. Further, as DHEC provides water quality monitoring for all watershed projects, NPS staff must also routinely examine the collected data to evaluate success and/or assist in directing grantees to where further work is needed.

Information on all 319-funded projects is uploaded to the Grants Reporting and Tracking System (GRTS). As of FY19, information is uploaded quarterly with grantee quarterly reporting, rather than annually, as was done previously. This includes details on project objectives and funding levels, as well as BMPs installed and estimated pollutant load reductions, as applicable. Project progress is also included in an Annual Report each December to document progress towards meeting the goals of the NPS Management Plan.

As the overall goal of the entire NPS Program is water quality improvement, perhaps the most valuable reporting tool is the documentation of project Success Stories. DHEC analyzes water quality data collected for watershed projects to determine if any water quality improvements have occurred. This information is then compiled with project details to generate an article to be posted on the EPA Success Story website. South Carolina generates stories for both full restoration where water quality standards have been attained and for partial restoration, where standards are not attained, but significant improvement has been made.

C. COASTAL NONPOINT SOURCE PROGRAM

The Coastal Nonpoint Program (CNP) is an extension of the statewide Nonpoint Source Management Program (319 Program) that fosters coordinated research, outreach, and management activities to enhance state and local efforts to manage NPS pollution affecting South Carolina's eight coastal zone counties. DHEC received full approval of the CNP in 2008.

DHEC's Office of Ocean and Coastal Resource Management (DHEC OCRM) works to mitigate the impact of NPS pollution from development in coastal areas through planning, permitting, and enforcement activities. DHEC OCRM staff also work with the NPS Program by serving on the Section 319 grant proposal review committee to rank and award funding for proposals and, when available, attending project kick-off meetings and site visits for coastal projects.

The Adopt-A-Beach program is part of the DHEC OCRM Marine Debris Initiative. Adopt-A-Beach volunteer groups participate in beach cleanups, remove debris from SC beaches and coastal waterways, and provide marine debris collection data to DHEC OCRM. Currently, 236 MyCoast members have used or are using the Beach Cleanup reporting tool, and DHEC OCRM has logged over 800 cleanups since the app was launched in April 2016.

In partnership with SCDNR, SC SeaGrant, and the SC Marine Association, DHEC OCRM staff participate in the SC Clean Marina Program, part of an effort to use best management practices to protect and improve

water quality at marinas. The program provides a unique opportunity for marina owners and operators to protect water quality and to be recognized for their efforts by meeting prescribed environmental performance criteria.

D. REGIONAL NONPOINT SOURCE RESPONSE

Due to increased population growth and drastic changes in land usage, acute nonpoint source incidents are increasing in both frequency and potential water quality impacts. DHEC's regional staff investigate nonpoint source-related complaints, including problems from silviculture, agriculture, stormwater, and runoff from construction sites.

Personnel attempt to prevent any further impact and work toward mitigation of offsite impacts with the responsible party and other interested entities. Uncooperative or recalcitrant parties are referred to DHEC's Bureau of Water Enforcement Section for violations of the Pollution Control Act and the State's Antidegradation Regulations.

E. CHAMPIONS OF THE ENVIRONMENT

Champions of the Environment is an annual grant award program that provides funding to South Carolina K-12 students and teachers to implement environmental action and awareness projects in their school and community. The program reaches hundreds of school-aged children, educators, and members of the general public while promoting the grant program and NPS issues. Champions of the Environment is supported by a public-private partnership including local businesses and the Environmental Education Association of South Carolina.

F. ADOPT A STREAM

South Carolina Adopt-a-Stream is a volunteer citizen water quality monitoring program that provides the opportunity to be directly involved in the protection and improved management of our watersheds. Volunteer monitors provide vital baseline data that helps determine the health of South Carolina waterways. In sharing this information on the local level, partnerships are formed that can lead to greater protection and restoration of the State's waters. SC Adopt-a-Stream-trained volunteers increase awareness within their communities and encourage others to join in watershed stewardship.

G. SC WATERSHED ATLAS

Historically, SCDHEC's Watersheds and 319 Program shared extensive water quality information through published Watershed Water Quality Assessments. The assessments have been replaced by the SC Watershed Atlas.

The SC Watershed Atlas brings the Agency's most current and comprehensive watershed and water quality information into a user-friendly, statewide application. This searchable atlas includes watershed boundaries and descriptions; 319 projects, WBPs, and Success Stories; Bureau of Water permits and

advisories; public water supply; water quality monitoring stations and assessments; water classifications; floodplains; National Wetland Inventory; National Land Cover Data; Municipal Separate Storm Sewers (MS4s); TMDLs; and more. A selection of basemaps, measuring and drawing tools, map-making and printing capabilities, and an instructive help section are also available.

General maintenance of the SC Watershed Atlas is designed to be as self-sustaining as possible. Typically, Bureau of Water program layers on the Atlas are updated by program area staff in GIS, working with IT's GIS staff as needed. However, the Atlas is primarily sustained by the GIS staff of SCDHEC's IT section. FY19 brought about a complete overhaul of the SC Watershed Atlas, making it more comprehensive and user-friendly. This update also provided a separate section for nonpoint-source-related information, making it much easier for users to access.

H. ADVISORY PROGRAMS

Freshwater Swimming Advisories

The Watershed Program educates citizens about current nonpoint source health risk advisories, how they can reduce their NPS contributions, and encourages adherence to advisory guidelines. A website, outreach materials, and 1-800 information line increase awareness of health risks associated with swimming in impaired waters. They are also used as a springboard for increasing awareness of NPS issues and steps citizens can take to reduce their contributions to runoff pollution. Staff work with Central and Regional DHEC offices to address concerns from the public about these advisories.

Saltwater Swimming Advisories

In addition to freshwater swimming advisories, DHEC staff issue advisories for coastal waters from May through October to inform recreational users about potential bacteria risks from NPS pollution. DHEC routinely collects water samples at over 120 locations on SC beaches in accordance with federal standards. Advisories may be issued due to high bacteria counts or rainfall. DHEC uses multiple outlets to advertise advisory information including newspapers and television at affected beaches.

Fish Consumption Advisories

DHEC collaborates with the South Carolina Department of Natural Resources (DNR) to educate citizens about the potential risks of eating fish due to mercury and PCB contamination. DHEC collects and tests a variety of fish from South Carolina lakes, rivers, streams, estuaries, and offshore waters and issues recommendations about which types of fish are safe and how much fish is safe to eat from each waterbody. Advisory information is communicated to the public and at-risk groups via a comprehensive website and, when funding is available, booklets and brochures.

Fish Advisories are one component of DHEC's broader Mercury Assessment and Reduction Initiative, which identifies ways that the public, industry, interested groups, and the government can collectively monitor, assess, and address mercury in the environment and reduce mercury exposure.

I. STATE REVOLVING FUND

The State Revolving Fund (SRF) program provides low-interest rate loans for building or repair to wastewater and drinking water systems and stormwater quality improvement projects. Through the

Clean Water State Revolving Fund (CWSRF), a wide array of water quality improvement projects may be funded, including green infrastructure projects, stormwater management controls, and nonpoint source reduction projects. Nonpoint source projects receive a lower interest rate to incentivize the use of this substantial funding resource.

The CWA requires that states develop a comprehensive list of potential projects eligible for funding from the CWSRF and rank them in priority order. Multiple DHEC programs provide input into the CWSRF ranking system, including the Nonpoint Source Program. To combine resources to improve water quality, proposed CWSRF projects complementing a water quality improvement effort that has received 319 funding are awarded additional points in the ranking system, making such projects a higher priority for SRF funding.

In 2019, the Nonpoint Source Program and the SRF Program collaborated to create a 319 Nonpoint Source and Clean Water State Revolving Fund Joint Funding Opportunities fact sheet. This will be utilized as a guide and appendix for 319 RFPs going forward to increase projects addressing NPS pollution by public entities and create a more concerted effort among SCDHEC's own programs. It is linked and mentioned on the Watersheds and 319 webpage.

DHEC also sets aside a small percentage of the Drinking Water State Revolving Fund (DWSRF) capitalization grant, usually around $100,000 for the development of watershed-based plans (WBPs) for watersheds that have Source Water Protection Areas (SWPAs). A request for proposals is issued in September for the development of watershed-based plans as mandated by the EPA's watershed-based plans development guidance document. The plans address ambient surface water pollutants and their impacts on surface water bodies that are also drinking water sources. Proposals are accepted from SRF-eligible borrowers, watershed organizations, soil and water conservation districts, regional planning commissions, and public universities. All DHEC-funded WBPs contain EPA's nine required elements.

J. STORMWATER

Stormwater runoff from construction activities, industrial operations, and storm sewer systems in urbanized areas has the potential to accumulate pollutants as it crosses the landscape. Most of these are considered point sources and must comply with both federal and state regulations to ensure that polluted stormwater does not have an adverse effect on the State's waters.

DHEC implements and enforces numerous laws, regulations, and policies to limit and control adverse impacts of stormwater. The federal National Pollutant Discharge Elimination System (NPDES) program is the primary driver for most state and federal stormwater regulations. Under the NPDES Permit Program, stormwater discharges are labeled as point pollution sources, and operators of these sources may be required to obtain an NPDES permit before they can discharge. More information on specific permitting activities for construction, industrial activities, and municipal separate storm sewer systems (MS4s) can be found on DHEC's Stormwater webpages.

Most stormwater regulations can be met by implementing site-specific structural and non-structural best management practices (BMPs) and/or through municipal pollution prevention programs. The South Carolina Department of Transportation also maintains standard technical specifications for sediment and erosion control practices for roads and highways.

K. ONSITE WASTEWATER

According to the EPA, about 40 percent of homes in South Carolina rely on septic systems to treat their wastewater. In an average year, 10 to 30 percent of septic systems fail to work properly, usually because of poor maintenance.

Improperly functioning septic systems can be a significant source of NPS pollution, particularly in rural areas. Because incorrectly installed septic tanks can harm water quality and cause human illness, SC law requires site approvals and permits for all septic systems for new construction. South Carolina also requires septic tank professionals to obtain a license before installing or pumping out septic tanks.

DHEC staff provide technical assistance to landowners regarding proper installation and maintenance of septic systems to help alleviate or correct water quality problems. Staff also work closely with 319 projects where failing septic systems are contributing to NPS pollution problems. The 319 program refers low-income, rural homeowners outside of 319 project areas to USDA Rural Development's Section 504 Home Repair program for assistance with septic system repairs or replacement. These funds enable homeowners to afford the service, increasing the number of systems that can be repaired in each watershed. Every repaired system improves not only the quality of life for the homeowner, but also the quality of water for everyone in the watershed. South Carolina's 319 grantees include fixing and replacing malfunctioning septic tanks in their watershed-based plans, and many 319 projects focus on this.

L. AGRICULTURE

Agricultural Permitting

State Law and Regulations require owners and operators of most animal feeding operations (AFOs) to obtain permits for the handling, storage, treatment (if necessary), and disposal of manure, litter, and dead animals generated at their facilities. In addition to the state permit, AFOs are required to have a National Pollutant Discharge Elimination System (NPDES) permit if they have a discharge to surface water. Other agricultural activities such as peach packing, stock yards, slaughter houses, and meat markets may also be required to have agricultural permits depending upon their specific situation.

Owners of agricultural facilities are assisted by DHEC in achieving and maintaining compliance with their permits. Enforcement actions are taken, when necessary, to attain compliance with permits, water quality standards, and state laws and regulations.

Under the Clean Water Act, stormwater discharge from irrigated agriculture is considered NPS pollution. Thus, many of South Carolina's 319 grantees include agricultural BMPs in their watershed-based plans, and many 319 projects incorporate this in their chosen water quality improvement activities.

USDA Natural Resources Conservation Service

USDA's Natural Resources Conservation Service (NRCS) provides financial and voluntary technical assistance to eligible landowners and agricultural producers to help sustainably manage natural resources. In particular, the Environmental Quality Incentives Program (EQIP) provides technical and financial assistance, at a 75 percent cost-share rate, to farmers to install or implement structural and management conservation practices that can improve water quality. While EQIP is administered by the USDA-NRCS, State priorities are established with input from a State Technical Committee (STC) which is

comprised of representatives from federal and state conservation agencies, including DHEC Nonpoint Source Program staff, agricultural producers, nonprofit organizations, and agribusiness.

In addition to statewide collaboration, county NRCS staff provide technical assistance for 319 projects. 319-funded projects also leverage EQIP funds to provide additional financial assistance and incentive to farmers and landowners installing management practices that reduce nonpoint source pollution.

M. PESTICIDES

DHEC Pesticide Permitting

Application of pesticides to surface waters of the State requires a permit under the federal Clean Water Act. DHEC issued a general permit to allow owners and operators to have a means to carry out important activities to control unwanted pests and vegetation and comply with the Clean Water Act and State rules. While some of the State's surface waters can be dry during dry times of the year, a discharge to those areas still requires a permit to legally allow the activity.

Clemson University Pesticide Regulation

Clemson University's Department of Pesticide Regulation promotes the safe and proper use of pesticides. The Department of Pesticide Regulation is the enforcement and investigative authority in South Carolina for pesticide use and alleged misuse in accordance with state and federal laws and regulations. Clemson's programs include applicator licensing and education, pesticide container recycling, integrated pest management in schools, endangered species protection, and the worker protection program.

N. WETLANDS

CWA Section 404

Under CWA Section 404, a permit is required for the discharge of dredged or fill material into waters of the United States. The US Army Corps of Engineers (USACE) evaluates permit applications for construction activities that occur in the nation's waters, including wetlands.

CWA Section 401

CWA Section 401 requires that the State issue certification for any activity which requires a federal permit or license and may result in a discharge to waters of the State such as permits issued by the USACE. US Coast Guard Permits and Federal Energy Regulatory Commission licenses also require states to take water quality certification action. During review of applications for water quality certification, DHEC assesses a project's water quality impacts and ensures that the appropriate mitigation sequence of avoidance, minimization, and compensation has been followed. Certification is denied if the activity permanently alters the aquatic ecosystem in the vicinity of the project such that its functions and values are eliminated or impaired. The federal permit cannot be issued if certification is denied. Certification is often conditioned upon the successful completion of compensatory mitigation, the last step in the mitigation sequence. All 401 permits are issued with at least the following standard construction site BMP condition: The applicant must implement appropriate best management practices that will minimize erosion and migration of sediments on and off the project site during and after construction. These practices should include the use of appropriate grading and sloping techniques, mulches, silt fences, or other devices

capable of preventing erosion, migration of sediments, and bank failure. All disturbed land surfaces and sloped areas affected by the project must be stabilized.

O. FORESTRY

The South Carolina Forestry Commission implements a coordinated, statewide Best Management Practices (BMP) Program for forestry-related activities, which is supported in part by an annual 319 grant. The BMP Program focuses on a proactive approach to preventing NPS pollution through aerial detection of harvesting sites and courtesy exams by trained Forestry BMP Specialists. The courtesy exams provide forest landowners with site-specific BMP information that can be included in timber sale contracts.

The program includes a water quality BMP training program for timber harvesters. The program also incorporates an enforceable mechanism to ensure compliance with the BMPs. Close cooperation with DHEC is essential on sites referred for enforcement action and in correcting problems to ensure compliance with water quality requirements. NPS Staff meet with the Forestry Commission at least annually and conduct an annual visit to a harvesting site to see BMPs that have been implemented.

P. GROUNDWATER

Groundwater is the source of drinking water for 40 percent of South Carolina's population and is used by agricultural, industrial, and commercial entities. Recognizing that restoration of contaminated groundwater is expensive and technologically complex, DHEC focuses on protecting the quality and quantity of the state's groundwater resources through permitting and reporting, underground injection control, and private well inspection programs.

Source Water and Wellhead Protection

DHEC provides Source Water Assessments to public water supply systems that contain information about how susceptible a drinking water source may be to contamination, which can be used to mitigate potential NPS pollution. DHEC and the SC Rural Water Association provide technical assistance to communities developing and implementing source water protection plans based on assessment results.

Q. MINING

In 1974, the SC Mining Act was passed to ensure all mined lands would be returned to some useful purpose and to protect people and the environment. The Act defines mining as the removal of ores from the ground for sale (i.e. granite quarries) or for use in a business (i.e. brick manufacturing). There are several types of surface mining done in South Carolina: open pit (i.e. granite, vermiculite), strip mines (i.e. sand, clay, gravel), and sand dredging from river bottoms.

South Carolina issues two types of mine permits, individual and general, and one mineral exploration certificate. Mine permits and certificates are issued through the Mining and Reclamation section in DHEC's Bureau of Land and Waste Management. Nonmetal mineral mining is permitted through the Bureau of Water's Stormwater Division. Inspections of mining operations are conducted until reclamation of the mine is complete.

VI. PROTECTING HEALTHY WATERS

Traditionally, most of South Carolina's NPS Management work has focused on restoring impaired waters and reducing nonpoint source impacts on surface water quality. However, South Carolina's 319 Program understands the importance of protecting high-quality waters to assist in guiding State priorities and actions.

Such efforts to avoid impairments will be more cost-effective—especially to tax payers—, and in the long run, have fewer technical challenges than would restoration efforts for impaired waterbodies. High-quality waters are known to provide an array of ecological, economic, and health benefits, such as buffering water quality degradation in the surrounding area, increasing resilience to the impacts of climate change, reducing drinking water treatment and infrastructure costs, and reducing flood mitigation costs—all aspects critical to South Carolina. Thus, South Carolina's NPS Program will focus more on protection in the next five years than has previously been the case.

To assist in achieving enhanced water quality protection for the state, South Carolina's NPS Program anticipates coordinating with watershed groups, land management agencies, and land trusts to protect healthy waters. Several such groups have already been identified, such as the SC Land Trust Network and The Longleaf Alliance. The NPS Management Program will work with these and other watershed partners to develop watershed-based plans (WBPs) for watersheds with current high-quality waters.

One FY18 319 implementation project has focused entirely on conservation easements, and several watershed-based plans have voluntarily identified and incorporated protection aspects, such as conservation easements and prioritization of land for protection within the watershed. However, going forward, protection best management practices will be required in DHEC-accepted WBPs and will thus allow for more protection elements to be eligible for 319 grant funding, ensuring increased protection of state high-quality waters.

VII. CLIMATE CHANGE

Climate change in South Carolina could result in both higher stream temperatures and more intense watershed disturbances. Examples of more intense watershed disturbances include: rain events, more frequent and intense flooding, tropical storm events, higher stream flows, rising sea levels, increased erosion rate, displacement of coastal wetlands, more frequent and larger wildfires, and tidal mixing. Such changes would likely cause increased levels of pathogens, nutrients, and dissolved oxygen in waterbodies. These changes could then also cause harm not only to humans, but to native aquatic life populations, such as macroinvertebrates and fish.

Thus, the South Carolina NPS Program will also consider future threats when managing watersheds and 319 grants. While protection and restoration efforts are specifically taken to improve water quality, they can also have a significant positive impact on the social and economic wellbeing of South Carolina and its residents now and into the future. Integration of flood resiliency and adaptation planning approaches as a response to the potential impacts of climate change, as noted above, will therefore be included in watershed planning through the NPS Program, following the EPA's nine element watershed-based plan format.

Many of the actions described in this Plan will assist in mitigating the impacts of more intense watershed disturbances and the related impacts on water quality. Examples of some of these actions include:

- Assessing, prescribing, and implementing best management practices (BMPs) that project forward what local needs may be and incorporate adaptation planning aspects to ensure proposed BMPs take more intense watershed disturbances and their impacts into consideration
- Designing, selecting, and placing BMPs that consider seasonal and event flow changes (e.g. set agricultural exclusion fencing back further)
- Including BMPs that protect and/or restore watershed resiliency
- Retaining forests through conservation easements
- Using native vegetation to protect and restore wetland areas and riparian areas
- Disconnecting direct discharge from impervious surfaces from streams
- Using Green Infrastructure and Low-Impact Development
- Reconnecting floodplains with rivers
- Supporting local efforts that address climate change-related water quality impacts

VIII. PARTNER ORGANIZATIONS AND OUTSIDE FUNDING

A key element to the success of the NPS Program is close partnering and coordination with outside organizations. This occurs at both a programmatic level and at a watershed stakeholder level for specific project implementation. Programmatic partners work with DHEC to implement strategies that are common to organization missions. At a watershed level, most NPS projects are led by a local entity in partnership with various governmental agencies, in addition to DHEC, that have programs targeting the reduction of NPS pollution as part of their overall mission and program goals. These entities have provided technical support, helped establish relationships with stakeholders, and provided additional funding for some projects.

In addition to federal funding provided by the Clean Water Act, South Carolina provides state funds to carry out NPS activities. Section 319 requires federal funds to be matched 40 percent with non-federal funds for both program management and watershed project activities. Match includes cash and in-kind services used for NPS activities if they are not sustained by another federal source. Federal sources of funding may be used in combination with 319 implementation project funds. However, other federal sources of funding may not be used as part of the required 40 percent match for 319 projects.

To expand on its history of successful partnerships, DHEC continuously seeks to broaden its base of partners. These efforts will ensure a broader base of stakeholder support for watershed-based plan implementation, identify new entities that have a history of working with partners to potentially participate in the 319 Program, and increase opportunities for collaborative funding.

DHEC has successfully collaborated with organizations on NPS-related projects including:

- USDA NRCS
- Clemson University
- SC Forestry Commission
- US Geological Survey
- SC Department of Natural Resources
- SC Soil and Water Conservation Districts
- Clemson University Extension
- US Forest Service
- National Park Service
- US Department of Agriculture
- Local governmental agencies
- Regional Councils of Government
- Drinking water utilities
- Nonprofit organizations

Several examples of federal sources of funding that can complement 319 grant projects are listed on 319 project solicitations, and include:

- USDA Natural Resources Conservation Service – Environmental Quality Incentives Program (EQIP)
- USDA Natural Resources Conservation Service – USDA Conservation Innovation Grant
- USFEMA – Hazard Mitigation Assistance
- USHUD – Community Development Block Grant (CDBG)

IX. PLAN OBJECTIVES AND MILESTONES

South Carolina has established a detailed set of five-year objectives and milestones to track progress towards meeting the goals of this Plan. DHEC believes that these strategies direct the NPS Program to activities most likely to result in water quality improvements as well as efficient spending of 319 grant funds. Related partners are included with each milestone as well as a schedule of when each milestone will occur based on the year. These milestones will be included in Annual Workplans for the State's 319 grant and will be reported in NPS Annual Reports.

KEY

The following key should be referenced to determine which NPS Program goals, guiding principles, and other considerations are related to each milestone.

2 GOALS:
(**P**) Protection
(**R**) Restoration

5 GUIDING PRINCIPLES:
(**1**) Provide technical assistance, education, and outreach to effectively address NPS pollution
(**2**) Strengthen partnerships and collaborative efforts to address NPS pollution
(**3**) Ensure compliance with regulatory requirements
(**4**) Administer the NPS program efficiently and effectively
(**5**) Utilize innovative and progressive strategies, ideas, and methods

1 OTHER CONSIDERATION:
(**C**) Climate change

SOUTH CAROLINA NPS PROGRAM 5-YEAR WORKPLAN

				Schedule				
Five-Year Objective	Milestone	Partners	Key	2020	2021	2022	2023	2024
Monitoring and WQ Assessment								
Assess statewide water quality through consistent monitoring to identify waterbodies not fully meeting standards due to nonpoint sources of pollution	a) Collect and analyze monthly samples at 90 sites for the probabilistic monitoring program	DHEC Aquatic Science Programs	P, R, C, 4	X	X	X	X	X
	b) Collect and analyze monthly samples at 235 base sites for routine monitoring	DHEC Aquatic Science Programs	P, R, C, 4	X	X	X	X	X
	c) Perform macroinvertebrate assessments statewide, typically 70	DHEC Aquatic Science Programs	P, R, C, 4	X	X	X	X	X

	sites per year depending on hydrology							
	d) Measure chlorophyll a levels at 100 sites monthly May through October	DHEC Aquatic Science Programs	P, R, C, 4	X	X	X	X	X
	e) Collect and analyze monthly water quality samples at established DHEC monitoring sites in all current NWQI watersheds	DHEC Aquatic Science Programs	P, R, C, 1, 2, 4	X	X	X	X	X
	f) Collect fish tissue samples at approximately 60 sites statewide and obtain other samples through partnering agencies and events. Analyze 900 tissue samples per year for mercury	DHEC Aquatic Science Programs	P, R, 2, 4	X	X	X	X	X
Implement and update sanitary surveys based on coastal water quality monitoring data	a) Collect monthly water quality samples at 450 sites to be used to establish shellfish classifications	DHEC Shellfish Sanitation Program	P, R, C, 4	X	X	X	X	X
	b) Perform sanitary surveys, identify needed corrective actions, and develop shellfish harvesting classifications in 25 shellfish growing areas	DHEC Shellfish Sanitation Program	P, R, C, 4	X	X	X	X	X
	c) Generate a trend report for annual shellfish harvesting classifications	DHEC Shellfish Sanitation Program	P, R, C, 1, 4	X	X	X	X	X
Develop and implement monitoring studies in watersheds where 319 projects have been or will be implemented	a) Update NPS monitoring QAPP to include new projects and other revisions and deliver plan to Department Quality Assurance Project Officer for final approval	DHEC Aquatic Science Programs; DHEC Watersheds & Nonpoint Source	P, R, C, 2, 3, 4	X	X	X	X	X
	b) Conduct monthly sampling at identified sites within 319 project watersheds, including all impaired locations, once projects are awarded and continuing at least 2 years after each project is completed	DHEC Aquatic Science Programs; DHEC Watersheds & Nonpoint Source	P, R, C, 2, 4	X	X	X	X	X
	c) Work closely with DHEC Aquatic Science Programs staff involved with 319 monitoring to ensure all 319 project sites are adequately monitored	DHEC Aquatic Science Programs; DHEC Watersheds & Nonpoint Source	P, R, C, 2, 4	X	X	X	X	X
Review 319 Monitoring Strategy and methods and revise as needed to	a) Meet with DHEC Aquatic Science Programs staff to optimize 319 monitoring strategy and methods;	DHEC Aquatic Science Programs; DHEC	P, R, C, 2, 4	X	X	X	X	X

most effectively assess 319 project water quality using available resources	incorporate results into State Monitoring Strategy	Watersheds & Nonpoint Source						
Effectively assess and document the impacts of 319-funded implementation projects on water quality through collection and analysis of samples	a) Analyze all samples according to appropriate analytical protocol	DHEC Aquatic Science Programs	P, R, 4	X	X	X	X	X
	b) Assess all 319 project sites within 1 year after completion of post-project monitoring and document any water quality improvements for inclusion in the Annual Report and Success Stories	DHEC Aquatic Science Programs; DHEC Watersheds & Nonpoint Source	P, R, 2, 4	X	X	X	X	X
	c) Compile, review, and document all available monitoring data for historical and recently completed 319 projects	DHEC Aquatic Science Programs; DHEC Watersheds & Nonpoint Source	P, R, 2, 4	X	X	X	X	X
Identify and develop success stories for fully or partially restored waterbodies primarily impaired by NPS pollution	a) Monitor promising 319 Success Story sites regularly	DHEC Aquatic Science Programs; DHEC Watersheds & Nonpoint Source	P, R, 2, 4, 5	X	X	X	X	X
	b) Identify and develop Success Stories each year for watersheds showing full restoration or showing improvement	DHEC Watersheds & Nonpoint Source	R, 1, 4	X	X	X	X	X
SC Integrated Report and TMDLs								
Develop, maintain, and distribute South Carolina's Integrated Report including Part 1: 303(d) List of Impaired Waters and Part 2: Section 305(b) Assessment and Reporting	a) Solicit external data for inclusion in 303(d) assessment	DHEC Aquatic Science Programs; DHEC 303(d), Modeling, & TMDL	P, R, C, 1, 2		X		X	
	b) Assess all DHEC data plus appropriate external data to determine impairment status for 303(d), typically 2,000 sites per 2-year cycle and assess all statistical survey sites for the 305(b) report, typically 450 sites per 2-year cycle	DHEC Aquatic Science Programs; DHEC 303(d), Modeling, & TMDL	P, R, C, 2, 3		X		X	
	c) Prepare and put draft 303(d) lists on public notice and address subsequent public comments.	DHEC 303(d), Modeling, & TMDL	P, R, C, 2, 3	X		X		X

	Prepare ADB-compatible spreadsheet and GIS data files associate with 303(d) list. Deliver the Integrated Report comprised of both the 303(d) and 305(b) reports to EPA for approval							
Work collaboratively with the 303(d), Modeling, & TMDL section to support prioritization of restoration efforts	a) Provide assistance to TMDL staff for prioritizing locations for future TMDL development. An important criterion for TMDL prioritization is determining where there is a higher potential for implementation	DHEC 303(d), Modeling, & TMDL; DHEC Watersheds & Nonpoint Source	R, 2, 4, 5	X	X	X	X	X
319 & WBP Grants								
Aid stakeholders and selected WBP development projects in the development of WBPs	a) Serve as a facilitator for WBP development, as needed	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 4	X	X	X	X	X
	b) Work with Long Leaf Alliance, Savannah River Clean Water Fund, and SC Land Trust Network on WBPs and related feasible projects that highlight watersheds for protection	DHEC Watersheds & Nonpoint Source; land trusts	P, R, C, 1, 2, 4, 5	X	X	X	X	X
	c) Reach out to and work with drinking water intakes for WBP development and subsequent 319 projects	DHEC Watersheds & Nonpoint Source; drinking water intakes	P, R, C, 1, 2, 4, 5	X	X	X	X	X
	d) Incorporate protection strategies into all WBPs, such as conservation easements	DHEC Watersheds & Nonpoint Source	P, C, 1, 2, 4, 5	X	X	X	X	X
	e) Incorporate protection of unimpaired/high quality waters into WBPs, when possible	DHEC Watersheds & Nonpoint Source	P, C, 1, 2, 4, 5	X	X	X	X	X
	f) Incorporate adaptation planning and ways to address climate change impacts, especially for coastal entities, in WBPs	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 4, 5	X	X	X	X	X
	g) Review and provide draft comments on WBPs, ensuring compliance with EPA's nine required elements for 319 grant eligibility	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 3, 4, 5	X	X	X	X	X
Administer 319 grants including issuing and ensuring compliance with	a) Award grant agreements following annual project selection	DHEC Watersheds & Nonpoint Source	P, R, C, 3, 4	X	X	X	X	X

grant agreements, processing payments, and monitoring non-federal match	b) Review quarterly requests for reimbursement and progress reports from grantees to ensure compliance and track expenditures	DHEC Watersheds & Nonpoint Source	P, R, C, 3, 4	X	X	X	X	X
	c) Conduct a site visit with each active project at least once annually to ensure adherence to project goals and timeline	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 3, 4	X	X	X	X	X
Manage the 319 and WBP program, including solicitations and selection of projects	a) Update RFPs for WBP development and 319 implementation proposals at least annually based on changes, priorities, lessons learned, etc.	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 4, 5	X	X	X	X	X
	b) Issue statewide solicitations for WBP development and 319 implementation proposals at least annually	DHEC Watersheds & Nonpoint Source	P, R, C, 2, 3, 4	X	X	X	X	X
	c) Convene review committee to select projects based on NPS Program priorities after each grant solicitation period	DHEC Watersheds & Nonpoint Source; DHEC Ocean and Coastal Resource Management; DHEC Aquatic Science Programs	P, R, C, 2, 3, 4	X	X	X	X	X
	d) Annually award funding to committee-selected 319 implementation projects and WBP development projects	DHEC Watersheds & Nonpoint Source	P, R, 2, 3, 4	X	X	X	X	X
	e) Award 319 implementation projects with protection components, climate change considerations, and innovative BMPs, as able	DHEC Watersheds & Nonpoint Source	P, R, C, 4, 5	X	X	X	X	X
	f) Alert regional DHEC offices to new 319 implementation projects in their areas, including OCRM	DHEC Watersheds & Nonpoint Source; Regional DHEC Offices; DHEC Ocean and Coastal Resource Management	P, R, 2, 4, 5	X	X	X	X	X
	g) Create tools and share resources to assist in stakeholder-led development of watershed-based	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 4, 5	X	X	X	X	X

	plans and 319 implementation projects							
Work closely with the SCDHEC Water Pollution Compliance staff for 319 project proposals	a) Consult on project proposals to ensure BMPs go "above and beyond" MS4 requirements	DHEC Watersheds & Nonpoint Source; DHEC Water Pollution Compliance	P, R, 1, 2, 3, 4	X	X	X	X	X
	b) Obtain and have MS4 staff put Letters of Assurance on file to ensure 319-funded BMP load reductions will not be counted as meeting NPDES permit requirements	DHEC Watersheds & Nonpoint Source; DHEC Water Pollution Compliance	P, R, 2, 3, 4, 5	X	X	X	X	X
Ensure consistency with national and regional goals and requirements through participation in trainings, conferences, meetings, and webinars	a) Participate in at least 1 national or regional conference and 1 national or regional training such as the National NPS Conference, GRTS Training, or Region IV NPS Coordinators Meeting	DHEC Watersheds & Nonpoint Source	P, R, 2, 4, 5	X	X	X	X	X
	b) Participate in ACWA 319/NPS Workgroup Webinars	DHEC Watersheds & Nonpoint Source	P, R, 2, 4, 5	X	X	X	X	X
	c) As necessary, update the formal list of priority watersheds, according to NWQI and EPA priorities	DHEC Watersheds & Nonpoint Source; EPA; USDA NWQI	R, 2, 4, 5	X	X	X	X	X
Estimate load reductions for active and recently completed 319 projects	a) Increase cumulative annual load reductions resulting from 319-funded BMPs	DHEC Watersheds & Nonpoint Source; 319 Projects	P, R, 2, 4	X	X	X	X	X
	b) Upload BMP and load reduction information for all applicable projects to GRTS by February 28 in accordance with FY2019 revisions and mandated data elements	DHEC Watersheds & Nonpoint Source	P, R, 3, 4	X	X	X	X	X
Use the Grants Reporting and Tracking System (GRTS) to report on progress of active 319 projects	a) Regularly update and comprehensively review all project information in GRTS to ensure completeness by EPA's February 28 annual deadline in accordance with FY2019 revisions and mandated data elements	DHEC Watersheds & Nonpoint Source	P, R, 3, 4	X	X	X	X	X
Prepare Annual Report to Congress on progress in meeting NPS Program goals	a) Submit Annual Report to EPA by December 1st each year. Include information on all open 319 implementation projects and	DHEC Watersheds & Nonpoint Source	P, R, 3, 4	X	X	X	X	X

	report on status of Plan milestones for the year							
Submit annual 319 grant application to EPA	a) Prepare annual workplan, budget, and grant application. Submit to EPA by September 30th each year	DHEC Watersheds & Nonpoint Source	P, R, 3, 4	X	X	X	X	X
Complete grant close-out packages	a) Assemble and submit grant closeout packages within 90 days of a grant close. Grants from fiscal years 2015 through 2019 will be closed out in this 5-year Plan period	DHEC Watersheds & Nonpoint Source	P, R, 3, 4	X for FY 15	X for FY 16	X for FY 17	X for FY 18	X for FY 19
Work with the SC Forestry Commission to implement a Statewide Forestry BMP Compliance Program	a) Request annual workplan in April/May to have in hand by July, obtain EPA approval, and then issue or amend grant agreement with SC Forestry Commission in August	DHEC Watersheds & Nonpoint Source; SC Forestry Commission; EPA	P, R, 2, 3, 4	X	X	X	X	X
	b) Renew contract every five years as appropriate	DHEC Watersheds & Nonpoint Source	P, R, 2, 4	X				
	c) Follow up on any forestry referrals for water quality impacts	DHEC Water Pollution Compliance	P, 1, 2, 3	X	X	X	X	X
Regularly review NPS Management Plan for effectiveness and applicability to programmatic needs	a) Perform cursory plan review and update objectives and milestones as needed as part of annual application process and Annual Report preparation	DHEC Watersheds & Nonpoint Source	P, R, C, 3, 4, 5	X	X	X	X	X
	b) Perform full plan review and update plan as needed	DHEC Watersheds & Nonpoint Source	P, R, C, 3, 4, 5	X		X		X
Stakeholder Outreach								
Collaborate with and provide technical assistance and water quality information to stakeholders to support the effective management of NPS pollution	a) Participate in stakeholder meetings and committees	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 4, 5	X	X	X	X	X
	b) Respond to requests for information including assistance with obtaining and analyzing water quality data	DHEC Watersheds & Nonpoint Source	P, R, 1, 2, 4	X	X	X	X	X
	c) Attend NRCS State Technical Committee meetings	DHEC Watersheds & Nonpoint Source; NRCS	P, R, 2, 4	X	X	X	X	X
	d) Distribute booklets about reining in runoff, as available	DHEC Watersheds & Nonpoint	P, R, 1, 4	X	X	X	X	X

		Source						
Increase statewide knowledge of the 319 program, projects, and grant opportunities	a) Present on the 319 Program, grant opportunities, and projects at various events and conferences	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 4, 5	X	X	X	X	X
	b) Encourage stakeholder organizations to apply for funding for WBP development and 319 implementation grants through various means, including emails, flyers, handouts, conferences, presentations, events, etc.	DHEC Watersheds & Nonpoint Source	P, R, C, 1, 2, 4, 5	X	X	X	X	X
Coastal NPS Program								
Decrease marine debris through voluntary partnerships and programs such as Adopt-a-Beach and the Clean Marina Program	a) My Coast – Adopt-a-Beach: Promote increased participation; produce annual summary including number of groups and number of debris items by type	DHEC Ocean and Coastal Resource Management	P, R, 1, 2, 4	X	X	X	X	X
	b) Participate in SC Clean Marina program as administered by the SC Marine Association	DHEC Ocean and Coastal Resource Management	P, R, 1, 2, 4	X	X	X	X	X
Collaborate with external partners to improve coastal awareness of non-point source pollution	a) Collaborate with the Ace Basin and North Inlet National Estuarine Research Reserves as well as the SC Coastal Information Network on preparation of communication materials that build awareness of BMPs among coastal stakeholders	DHEC Watersheds & Nonpoint Source; DHEC Ocean and Coastal Resource Management	P, R, 1, 2, 4, 5	X	X	X	X	X
Enhance and track marine debris removal efforts through collaboration with state and regional partners	a) Convene the Abandoned Vessel Working Group to improve coordination between federal, state, and local partners on abandoned/derelict vessels	DHEC Ocean and Coastal Resource Management	R, 2, 3, 4	X	X	X	X	X
	b) Identify and apply for marine debris removal funding opportunities with local, state, and/or federal partners	DHEC Ocean and Coastal Resource Management	R, 2, 3, 4	X	X	X	X	X
	c) Identify and assess Abandoned and Derelict Vessels (ADV) and other large marine debris items and process through compliance/enforcement procedures, if appropriate	DHEC Ocean and Coastal Resource Management	R, 3, 4	X	X	X	X	X
Continue interagency coordination and planning to study and mitigate climate change and related	a) Coordinate with SC DNR and other Living Shorelines Working Group partners on outreach and education for living shorelines	DHEC Ocean and Coastal Resource Management	P, R, C, 1, 2, 4, 5	X	X	X	X	X
	b) Continue to work with local governments on local	DHEC Ocean and Coastal	P, R, C, 1,	X	X	X	X	X

impacts such as shoreline changes and coastal erosion	comprehensive beach management plans and waterbody management planning efforts	Resource Management	2, 4, 5					
Coordinate management activities between the Coastal Management Program and 319 programs	a) Coastal Program and 319 staff will meet at least annually to coordinate efforts	DHEC Watersheds & Nonpoint Source; DHEC Ocean and Coastal Resource Management	P, R, C, 2, 4	X	X	X	X	X
	b) Coastal Program staff will serve on the 319 Review Committee for each 319-implementation funding round	DHEC Watersheds & Nonpoint Source; DHEC Ocean and Coastal Resource Management	P, R, C, 2, 4, 5	X	X	X	X	X
Ensure marina compliance with operation and maintenance manuals	a) OCRM Compliance and Enforcement staff will evaluate marina operation and maintenance manuals to ensure compliance with Critical Area permitting requirements	DHEC Ocean and Coastal Resource Management	P, R, C, 2, 3, 4	X	X	X	X	X
Champions of the Environment								
Promote NPS awareness through the Champions of the Environment grant awards program	a) Promote the Champions program through teacher workshops, environmental educators' conferences, social media, mail outs, targeted emails, and organizational webpages and newsletters	DHEC Watersheds & Nonpoint Source	P, R, 1, 2, 5	X	X	X	X	X
	b) Award 8 grants to environmental education projects. Develop and air TV commercials broadcasting each project. Promote winning projects through social media and local news coverage.	DHEC Watersheds & Nonpoint Source	P, R, 1, 2, 5	X	X	X	X	X
Adopt-A-Stream								
Increase awareness of local water quality and the Adopt-A-Stream (AAS) program	a) Encourage MS4s and other municipalities to use SC AAS as an education and outreach method for water quality awareness	DHEC Watersheds & Nonpoint Source	P, R, 1, 2, 5	X	X	X	X	X
	b) Present Adopt-A-Stream annually at the SC Association of Stormwater Managers (SCASM) meeting	DHEC Watersheds & Nonpoint Source	P, R, 1, 2, 5	X	X	X	X	X

	c) Include AAS equipment purchases as part of 319 grants planning to incorporate the SC AAS program	DHEC Watersheds & Nonpoint Source	P, R, 1, 2, 4, 5	X	X	X	X	X
	d) Make 319 grantees aware of the program and the possibility of adding local screening data	DHEC Watersheds & Nonpoint Source	P, R, 1, 2, 4, 5	X	X	X	X	X
	e) Add AAS as an example of an education/outreach component in the revised MS4 permit.	DHEC Watersheds & Nonpoint Source; DHEC Stormwater Permitting; DHEC Water Pollution Compliance	P, R, 1, 2, 5	X	X	X	X	X
SC Watershed Atlas								
Maintain SC Watershed Atlas	a) Respond to queries generated from Atlas users	DHEC Watersheds & Nonpoint Source; DHEC GIS	1, 2	X	X	X	X	X
	b) Communicate feedback and queries to Agency GIS program	DHEC Watersheds & Nonpoint Source	2	X	X	X	X	X
	c) Communicate with Bureau of Water programs to ensure assessed data are converted into Atlas specific tables and information, as the data becomes available	DHEC Watersheds & Nonpoint Source; DHEC BOW; DHEC GIS	2	X	X	X	X	X
	d) Coordinate with GIS program to ensure timely updates to the Atlas	DHEC Watersheds & Nonpoint Source; DHEC GIS	2	X	X	X	X	X
Document 319 implementation practices using GIS	a) Track all 319 implementation projects and locations of completed WBPs to the Atlas	DHEC Watersheds & Nonpoint Source; DHEC GIS	P, R, 1, 4	X	X	X	X	X
	b) Update Atlas as new projects are awarded	DHEC Watersheds & Nonpoint Source; DHEC GIS	P, R, 1, 4	X	X	X	X	X
	c) Provide links to more information on 319 projects,	DHEC Watersheds & Nonpoint	P, R, 1, 2, 4, 5	X	X	X	X	X

	completed WBPs, and project Success Stories	Source						
Advisories								
Increase awareness of health risks associated with swimming in impaired waters and educate citizens about how to reduce those risks and their NPS contributions to local waters	a) Annually review and provide NPS educational information as needed on Agency swimming advisory website	DHEC Aquatic Science Programs; DHEC Watersheds & Nonpoint Source	1	X	X	X	X	X
	b) Maintain a swim advisory line for the public	DHEC Watersheds & Nonpoint Source	1	X	X	X	X	X
Increase awareness of atmospheric deposition of mercury and the associated health risks through annual Fish Consumption Advisory information	a) Produce and distribute the SC Fish Consumption Advisory booklet as funds allow, and revise website	DHEC Aquatic Science Programs	1	X	X	X	X	X
State Revolving Fund (SRF)								
Prioritize SRF projects according to their potential to improve water quality and complement existing NPS reduction efforts	a) Assist SRF staff with goal setting in the CWSRF Intended Use Plan and, when it occurs, participate in revision of SRF Priority Ranking System to thoroughly include criteria that target NPS projects and watershed-based plan implementation	DHEC Watersheds & Nonpoint Source; DHEC State Revolving Fund	P, R, 1, 2, 5	X	X	X	X	X
	b) Using the SRF Priority Ranking System, review and score each project requesting SRF funding. Review includes assessment of priority watersheds, impairments, TMDLs, and 319 projects in the project area	DHEC Watersheds & Nonpoint Source; DHEC State Revolving Fund	P, R, 1, 2, 4, 5	X	X	X	X	X
Alternative Funding								
Identify and advertise alternate funding opportunities for WBP and 319 projects	a) Identify alternate avenues for WBP development beyond DWSRF funds and 319 implementation projects (both federal and non-federal match) beyond 319 grant funding	DHEC Watersheds & Nonpoint Source	R, P, C, 2, 4, 5	X	X	X	X	X
	b) Where available, work with outside entities to combine funding opportunities to support WBP and 319 grants	DHEC Watersheds & Nonpoint Source	R, P, C, 1, 2, 4, 5	X	X	X	X	X

	c) Advertise alternate avenues for grant funding in annual RFPs, the SCDHEC website, partner websites, and other avenues	DHEC Watersheds & Nonpoint Source	R, P, C, 1, 2, 4, 5	X	X	X	X	X
Coordinate with SRF staff to encourage implementation of NPS Plan goals and leverage State Revolving Fund money to address waterbodies affected by NPS pollution	a) Work in conjunction with CWSRF to advertise the use of SRF funds for NPS reduction projects and the potential for combining CWSRF and 319 funds for NPS reduction projects	DHEC Watersheds & Nonpoint Source; DHEC State Revolving Fund	R, P, 1, 2, 4, 5	X	X	X	X	X
	b) Utilize the joint funding opportunities fact sheet with RFPs to encourage the combined use of 319 and CWSRF funds for projects addressing NPS pollution	DHEC Watersheds & Nonpoint Source; DHEC State Revolving Fund	R, P, 1, 2, 4, 5	X	X	X	X	X
	c) When identified, point out joint funding opportunities to public entities with potential projects	DHEC Watersheds & Nonpoint Source; DHEC State Revolving Fund	R, P, 1, 2, 4, 5	X	X	X	X	X
Encourage the use of USDA resources to complement existing 319 efforts	a) Encourage grantees to utilize EQIP and other USDA funding options in watersheds with ongoing implementation projects, in annual solicitations and by word of mouth	DHEC Watersheds & Nonpoint Source; USDA NRCS	R, P, C, 1, 2, 4, 5	X	X	X	X	X
	b) Refer septic calls outside of active septic repair/replacement 319 implementation projects to USDA's Rural Development Single-Family Housing Repair/Section 504 Home Repair program	DHEC Watersheds & Nonpoint Source; USDA Rural Development	R, P, 1, 2, 4, 5	X	X	X	X	X
Permitting								
Issue permits, perform inspections, respond to complaints, make recommendations for improvement of stormwater-related programs, and coordinate compliance and enforcement action as needed	a) Issue construction, industrial, and MS4 stormwater permits statewide including permits that require additional monitoring and/or installation of BMPs in impaired and TMDL watersheds	DHEC NPDES Stormwater Permitting	P, R, 3	X	X	X	X	X
	b) Conduct stormwater site inspections and perform MS4 program audits	DHEC Water Pollution Compliance	P, R, 3	X	X	X	X	X
	c) Investigate acute NPS complaints from the public and MS4s statewide	DHEC Water Pollution Compliance	P, R, 2, 3	X	X	X	X	X
	d) Refer incidents to enforcement when voluntary remediation to remediate acute NPS incidents is unsuccessful	DHEC Water Pollution Compliance; DHEC Water	P, R, 2, 3	X	X	X	X	X

		Pollution Enforcement						
Ensure proper installation of onsite wastewater systems and provide technical assistance as needed	a) Issue permits for new septic systems	DHEC Onsite Wastewater Division	P, R, 3	X	X	X	X	X
	b) Issue licenses for septic installers and servicers	DHEC Onsite Wastewater Division	P, R, 2, 3	X	X	X	X	X
	c) Provide compliance assistance by investigating referrals and failing onsite wastewater systems	DHEC Onsite Wastewater Division	P, R, 2, 3	X	X	X	X	X
Permit, inspect, and provide technical assistance for agricultural facilities	a) Prepare and/or review agricultural waste permits statewide for animal facilities	DHEC Agricultural Permitting	P, R, 3	X	X	X	X	X
	b) Perform inspections including follow-up, complaints, site assessment, etc.	DHEC Agricultural Permitting	P, R, 2, 3	X	X	X	X	X
	c) Document noncompliant facilities and refer them to enforcement	DHEC Agricultural Permitting	P, R, 2, 3	X	X	X	X	X
Through 401 water quality certifications, require at least standard construction site BMP conditions to be implemented	a) Issue 401 water quality certifications requiring implementation of BMPs that will minimize erosion and migration of sediments on and off project sites during and after construction	DHEC Water Quality Certification and Wetlands; US Army Corp of Engineers	P, 3	X	X	X	X	X
Follow up on referrals for non-compliance and violations of the SC Pollution Control Act related to nonpoint source activities	a) Assign and follow up on all referrals	DHEC Water Pollution Control Division	R, 2, 3	X	X	X	X	X
	b) As needed, follow enforcement procedures for NPS stormwater and onsite wastewater violations	DHEC Water Pollution Control Division	R, 2, 3	X	X	X	X	X
Maintain a database to track permits, inspections, and compliance and enforcement actions	a) Enter all facility- and permit-related information into the Environmental Facility Information System (EFIS) or its replacement database	DHEC BOW; DHEC Ocean and Coastal Resource Management	P, R, 3	X	X	X	X	X

X. NONPOINT SOURCE PLAN EVALUATION—EVALUATING SUCCESS

South Carolina's NPS Management Program's success is based on meeting the Program's two long-term goals of protecting and restoring the State's water quality from the negative impacts of nonpoint source pollution. Specifically, the NPS Program strives to achieve water quality standards in waterbodies affected by NPS pollution, as documented through water quality monitoring efforts.

The Nonpoint Source Program uses a variety of environmental and administrative measures to determine the Plan's success, both in preventing and reducing the impacts of NPS pollution. Although water quality standard attainment maintains that the goals of the NPS Program are being met, meeting a water quality standard may take years to achieve and can be difficult to demonstrate in the short term given the variability of natural systems, the limited resources available to address the problems, and the extent and nature of the problem. Therefore, interim measures of success beyond water quality monitoring results are also important measures of progress in achieving improvements at the watershed scale.

This Section thus identifies the steps to evaluate the success of the Plan's five-year objectives and milestones, as well as DHEC's progress toward its two overarching Program goals.

A. PROGRAMMATIC EVALUATION

As mentioned, maintaining and attaining water quality standards can be a long-term achievement toward the State NPS Program's goals. Interim measures of success can thus serve as evidence that the NPS Management Program is making progress toward meeting water quality standards.

South Carolina's NPS Management Program tracks NPS Plan implementation progress and improvements through each five-year objective and annual milestone's success (see Section IX). DHEC also:

- uses its Integrated Report, submitted to EPA biennially, to track the number of waterbodies that are partially or fully supporting beneficial uses.
- uses EPA's Grant Reporting and Tracking System (GRTS) to document information addressing progress achieved through Section 319 funding provided by EPA to DHEC.
- tracks project-specific measures of success as outlined in EPA's strategic plan including the amount of pollutant load reductions resulting from 319-funded projects and NPS-impaired waterbodies that are fully or partially restored.
- documents progress in achieving NPS Program goals through Annual Reports to EPA and 319 grant Closeout Reports.
- reports 319-funded implementation project Success Stories highlighting waterbodies that are no longer impaired, waterbodies that have improving water quality trends, and healthy waterbodies that are being protected.

DHEC will use all measures of success to refine and adapt the NPS Program to changing programmatic, financial, and water quality conditions. DHEC will review the NPS Management Program each year, with a complete review every five years, and revise program components as necessary. As the Program seeks to

better document results of NPS implementation activities, it will work to refine its methods to more accurately and efficiently track and evaluate progress toward improving water quality.

B. EDUCATION AND OUTREACH EVALUATION

Education and outreach are required components to all 319 implementation projects as well as watershed-based plan development work, as it is necessary to ensure that the public has appropriate resources and knowledge to address nonpoint source issues and to maintain best management practices implemented on their land. Because addressing nonpoint source pollution is voluntary, ensuring that the public is informed about NPS pollution issues is critical to meeting DHEC's two goals. The NPS Program provides detailed information on its website and on handouts to the public. Grant-funded projects have evaluation tools in place to help maintain successful education and outreach efforts and to adjust the strategy as needed. The intent of these tools is to improve environmental conditions and bring about positive behavioral changes. Grant-funded projects use a variety of evaluation tools to measure and report on initial knowledge and changes in knowledge, behavior, or attitudes toward NPS pollution and best management practices, such as focus groups or surveys.

C. WATER QUALITY IMPROVEMENT EVALUATION

Water quality monitoring is critical for assessing the State NPS Management Program's long-term success. Thus, water quality monitoring data provides information necessary to assess the quality of the State's waterbodies and evaluate the effectiveness of protection and improvement efforts. Data allows decisionmakers to determine water program priorities and keeps the public up to date on important water quality trends and accomplishments.

319 Implementation Project Monitoring

Water quality monitoring is an important part of evaluating 319 implementation projects. The goal is protection and restoration—maintenance or attainment of water quality standards and removal of the waterbody from the 303(d) list of impaired waters. Full restoration and subsequent delisting are often difficult to achieve due to the variety of sources that may be contributing to the impairment and because upstream improvements may be attenuated at downstream monitoring sites. Thus, it is also important to document improvement as well as attainment.

Project effectiveness monitoring looks at how well a project reduces pollution on a small scale. This data ensures that best management practices are effective and advises maintenance activities that are necessary for long-term success. Monitoring is often used to populate a model demonstrating the effectiveness of a project, such as with pollutant load reductions. Effectiveness monitoring is required for implementation projects funded with Section 319 grant contracts. Thus, DHEC monitors all 319-funded watershed projects at existing, historic, or new DHEC water quality monitoring site(s) for the parameter(s) of concern during the life of the project and for at least two years after the project is completed. Monitoring frequency is once per month. Project monitoring data is assessed to identify 319 Success Stories and for DHEC's 303(d) list of impaired waters and is provided to EPA for tracking on a national level. It is important to mention that individual project success is not necessarily transferable to broad-scale water quality impacts.

Surface Water Monitoring

DHEC also collects data from a statewide network of ambient monitoring sites, which determines long-term water quality trends, assesses attainment of water quality standards, identifies locations in need of additional attention, and provides background information for planning and evaluation. Data is collected from ongoing fixed locations and statewide probability-based sites. Each is designed to provide data at different spatial and temporal scales. For a detailed discussion of each of these components, please see the most recent version of the State of South Carolina Monitoring Strategy, which can be accessed by visiting the Surface Water Monitoring webpage. Data collected is used for various purposes, including identifying waters not fully meeting designated uses due to nonpoint source pollution, assessing the effectiveness of NPS controls, and assisting in enforcement activities.

Fish Tissue Monitoring

DHEC collects fish from South Carolina lakes, streams, rivers, and estuaries to monitor the levels of contaminants in fish tissue. The data is used each year to calculate consumption rates for the South Carolina Fish Consumption Advisory.

Macroinvertebrate Monitoring

Aquatic macroinvertebrate communities can be useful indicators of water quality because they respond to integrated stresses over time. Macroinvertebrate monitoring provides information about the general biological condition of State waters that may be subject to point and nonpoint source impacts. DHEC's Aquatic Science Programs use this data to support a variety of programs, including the NPS Program.

Algal Monitoring

The Phycology Program studies algae to help examine water quality. Algae need sunlight, water, and nutrients to survive and grow; however, too much of these nutrients, such as phosphorous and nitrogen, can cause excess algal growth, which can cause problems for fish and other aquatic organisms living in the water. Some algae can also produce toxins that can be harmful to both human health and the environment. To estimate how much algae is in the water, chlorophyll a is measured and assessed in lakes throughout the state to determine if the lakes are meeting water quality standards or if they may be impaired due to nutrient enrichment. Chlorophyll a measures with a high reading indicate the waterbody could be in poor health.

Shellfish Monitoring

DHEC's Shellfish Sanitation Program collects data to ensure that shellfish (oysters, clams, and mussels) and the areas from which they are harvested meet the health and environmental quality standards provided by federal guidelines and state regulations. DHEC monitors stations in management areas along South Carolina's coast for fecal coliform bacteria. To protect public health, each area is assigned a classification to indicate whether and under what conditions shellfish harvesting is allowed based on current water quality data. Temporary shellfish bed closures often occur due to excess bacteria from nonpoint sources of pollution. The Shellfish Program tracks potential sources of NPS pollution in coastal areas and promotes water quality restoration of state waters designated for shellfish harvesting.

Partner Monitoring

DHEC works with and accepts data from other state and local organizations to make decisions and focus resources. DHEC has developed a guidance document to explain the different types, sources, and uses of external data to ensure data consistency.

XI. SOUTH CAROLINA NONPOINT SOURCE PROGRAM CONTACTS

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